714 and 715 -8 or -16 Point Zone Expanders

Description

The Model 714-8, 714-16, 715-8, and 715-16 Zone Expanders allow you to increase the number of protection zones available on a DMP panel. The 714-8 and 714-16 provide an additional eight or sixteen supervised zones for connecting burglary and non-powered fire alarm initiating devices to the panel. The 715-8 and 715-16 provide an additional eight or sixteen 12 VDC ungrounded (Class B, Style A) powered zones for connecting two-wire smoke detectors. Please see the panel installation guide for details on selecting compatible 2-wire smoke detectors.

Each of the zone expanders provide terminal strips for zone inputs and wiring connections, a jumper for LX-Bus™ or keypad bus designation, and a transmit data LED to indicate panel communication. The expanders mount in a Model 340 enclosure with lock. Separate zone end-of-line resistors and a key are included.

All fire device installations must be in accordance with the manufacturer instructions, NFPA standards, and Authority Having Jurisdiction (AHJ) requirements.

Mounting the Enclosure

Mount the zone expander metal enclosure in a secure, dry place to protect from damage due to tampering or the elements. It is not necessary to remove the zone expander circuit board when installing the enclosure. The enclosure can be surface or flush mounted using the holes provided. Each of the four sides have dual 1/2" and 3/4" conduit knockouts for running wires out of the enclosure.

Keypad or LX-Bus Jumper Setting

Each of the zone expanders provide a 3-pin header with jumper (J2) used to select the connection type to the panel. If the expander is connected to the LX-Bus, place the J2 jumper header on the far right two pins. Place the J2 jumper header on the far left two pins when connected to the keypad bus. See Figure 1.

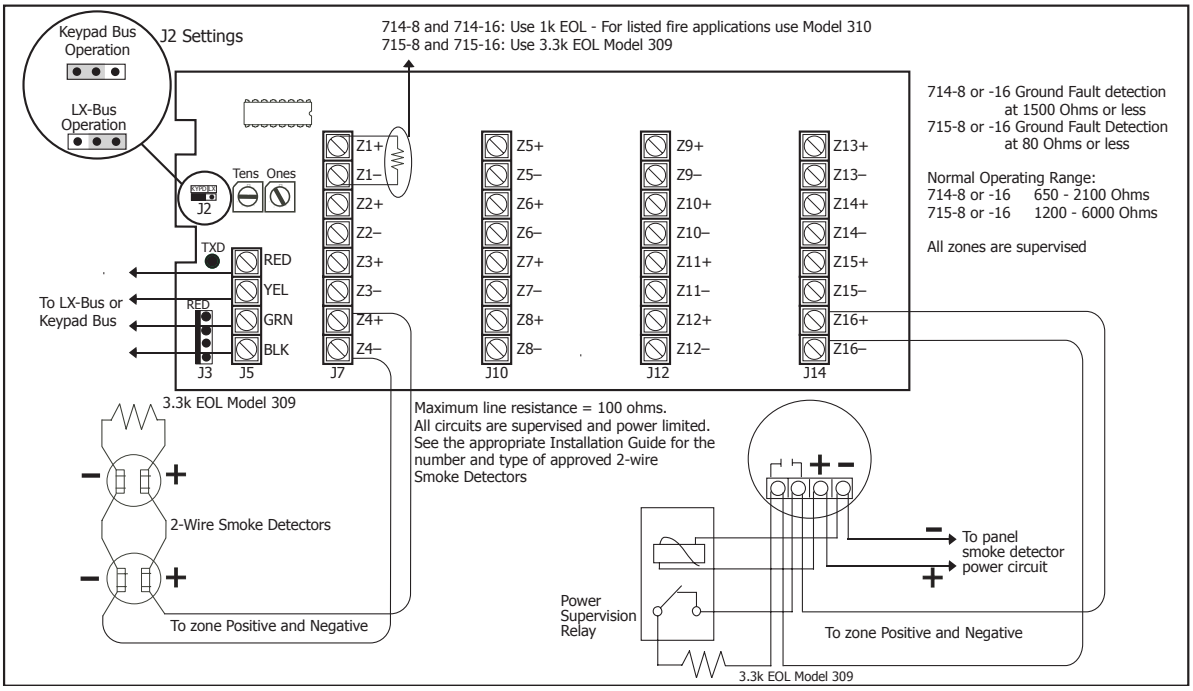

Figure 1: Expander Wiring Diagram

Setting the Address

Each zone expander has two rotary switches labeled TENS and ONES to configure the expander address from 00 to 99. To set the address, use a small slotted screwdriver and gently turn the center arrow on the switch clockwise to the number that matches the address. See Figure 2.

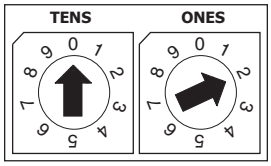

Figure 2: Address Switches

Keypad Bus Addressing

The ONES rotary switch must be set to a ***starting*** address that communicates the status of the first four zones (Z1 through Z4) on the expansion module. The next consecutive keypad address is ***automatically*** used to communicate the status of the next four zones (Z5 through Z8), etc.

For example, when you set the TENS switch to 0 and the ONES switch to 2, the first four expander zones respond as zones 21 through 24. Expander zones 5 through 8 respond as panel zones 31 through 34; zones 9 through 12 respond as panel zones 41 through 44; and zones 13 through 16 respond as panel zones 51 through 54. Refer to Tables 1 and 2 for keypad bus zone numbers and the panels where they operate.

Start Address		Expander Zones			
		1-4	5-8	9-12	13-16
Switches Tens	Ones	XR500 or XR350/XR550 Series Panel Zones			
0	1	11 to 14	21 to 24	31 to 34	41 to 44
0	2	21 to 24	31 to 34	41 to 44	51 to 54
0	3	31 to 34	41 to 44	51 to 54	61 to 64
0	4	41 to 44	51 to 54	61 to 64	71 to 74
0	5	51 to 54	61 to 64	71 to 74	81 to 84
0	6	61 to 64	71 to 74	81 to 84	91 to 94
0	7	71 to 74	81 to 84	91 to 94	101 to 104
0	8	81 to 84	91 to 94	101 to 104	111 to 114
0	9	91 to 94	101 to 104	111 to 114	121 to 124
1	0	101 to 104	111 to 114	121 to 124	131 to 134
1	1	111 to 114	121 to 124	131 to 134	141 to 144
1	2	121 to 124	131 to 134	141 to 144	151 to 154
1	3	131 to 134	141 to 144	151 to 154	161 to 164
1	4	141 to 144	151 to 154	161 to 164	None
1	5	151 to 154	161 to 164	None	None
1	6	161 to 164	None	None	None

Table 1: Keypad Bus Zone Numbers

Start Address		Expander Zones			
		1-4	5-8	9-12	13-16
Switches Tens	Ones	Panel Zones			
		XT30, XT50, XR100 or XR150			
0	1	11 to 14	21 to 24	31 to 34	41 to 44
0	2	21 to 24	31 to 34	41 to 44	51 to 54
0	3	31 to 34	41 to 44	51 to 54	61 to 64
0	4	41 to 44	51 to 54	61 to 64	71 to 74
0	5	51 to 54	61 to 64	71 to 74	81 to 84
0	6	61 to 64	71 to 74	81 to 84	None
0	7	71 to 74	81 to 84	None	None
0	8	81 to 84	None	None	None

Table 2: Keypad Bus Zone Numbers

LX-Bus Addressing

When connecting to the LX-Bus, the rotary switch settings on the expanders must match the second two digits of the first panel zone being used. The next 15 zone addresses are ***automatically*** used to communicate the status of the expander zones 2 through 16.

For example, if you set the TENS switch to 3 and the ONES switch to 2, the sixteen zones on the expander respond as panel zones 532 to 547. When connected to LX-Bus 2, the zones respond as 632 to 647.

Note: The LX-Bus provides zones 500 through 599, 600 through 699, 700 through 799, 800 through 899 and 900 through 999 on XR500 Series or XR350/XR550 Series panels. On XR100 and XR150 panels the LX-Bus provides zones 500 through 599. When addressing the module, use an address that provides the proper number of zones. For example, if you set the switch address on the module to 99, you can only use one zone as shown in Table 3 below.

Start Address		Panel LX-Bus Numbers and their corresponding Zone Numbers					
Switch Tens	Ones	XR100 and XR150 Series	XR500 and XR550 Series (LX500 - LX900)				
			XR350 Series (LX500 - LX700)				
		1(LX500)	1(LX500)	2(LX600)	3(LX700)	4(LX800)	5(LX900)
0	0	500	500	600	700	800	900
0	1	501	501	601	701	801	901
0	2	502	502	602	702	802	902
0	3	503	503	603	703	803	903
0	4	504	504	604	704	804	904
...	...	...	...	...	...	...	...
9	5	595	595	695	795	895	995
9	6	596	596	696	796	896	996
9	7	597	597	697	797	897	997
9	8	598	598	698	798	898	998
9	9	599	599	699	799	899	999

Table 3: LX-Bus Zone Numbers

Wiring

Each zone expander can connect to a panel keypad bus. Also, the zone expander can connect to an XR100/XR500 or XR150/XR350/XR550 Series panel LX-Bus. On an XR100/XR500 Series, the zone expander can connect directly to the LX-Bus Connector (J22) on the panel or use an LX-Bus Interface card such as a 481 or 463C, as shown in Figure 1. All circuits are power limited.

On an XR150/XR350/XR550 Series: connect the zone expander directly to the LX500 - LX900 connectors on the panel.

Note: 481, 463C, 462P, and 462N LX-Bus Interface Cards are not for use with XR150/XR350/XR550 Series panels.

Wiring the 715-8/16 Module

For the 715-8/16 module, connect the **Red** wire to the panel **Smoke** power terminal. This allows **Sensor Reset** to drop power to the module and devices connected to its zones. Alternately, connect **Red** to a regulated, power limited power supply listed for Fire Protective Signaling through a Model 716 relay. Use the Sensor Reset Output programming to drop power to the 715-8/16 Module.

Wiring Specifications for Keypad and LX-Bus

1. DMP recommends using 18 or 22-gauge **unshielded** wire for all keypad and LX-Bus circuits. **Do Not** use twisted pair or shielded wire for LX-Bus and keypad bus data circuits. To maintain auxiliary power integrity when using 22-gauge wire do not exceed 500 feet. When using 18-gauge wire do not exceed 1,000 feet. Install an additional power supply to increase the wire length or add devices.
2. Maximum distance for any one circuit (length of wire) is 2,500 feet regardless of the wire gauge. This distance can be in the form of one long wire run or multiple branches with all wiring totaling no more than 2,500 feet. As wire distance from the panel increases, DC voltage on the wire decreases.
3. Maximum number of devices per 2,500 feet circuit is 40.
   Note: Each panel allows a specific number of supervised keypads. Add additional keypads in the unsupervised mode. Refer to the panel installation guide for the specific number of supervised keypads allowed.
4. Maximum voltage drop between the panel (or auxiliary power supply) and any device is 2.0 VDC. If the voltage at any device is less than the required level, add an auxiliary power supply at the end of the circuit. When voltage is too low, the devices cannot operate properly.

For additional information refer to the panel installation guide and LX-Bus/Keypad Bus Wiring Application Note (LT-2031) or the 710 Installation Guide (LT-0310).

Compliance Listing Specifications

UL

To comply with ANSI/UL 365 Police-Connected Burglary System or ANSI/UL 609 Local Burglary Alarm Systems, the module must be mounted in the supplied, UL listed enclosure with a tamper.

Any power supply used in a fire listed installation must be regulated, power limited, and listed for Fire Protective Signaling.

ULC Commercial Burglary (XR100/XR500 Series or XR150/XR350/XR550 Series Panels)

A DMP Model 307 Clip-on Tamper Switch programmed as a 24-Hour zone is required on the zone expander enclosure.

The 714/715 zones can be installed in Medium or High Risk applications when two zones are used as shown in the Dual Zone Protection diagram in the XR100/XR500 or XR150/XR350/XR550 Canadian Installation guides. Otherwise, 714/715 zones can only be used in Low Risk Applications.

ULC Residential Fire

Refer to the table below for ULC approved 2-Wire Smoke Detectors. Refer to the panel installation guide for the complete list of UL approved smoke detectors.

Manufacturer	Model	Detector ID	DC Voltage Range	# of Detectors
Sentrol/ESL	528B, 528BXT	S09A	6.5-20	12

Specifications

Operating Voltage 8.8 to 15.0 VDC

Operating Current

714-8/16	
Average	20mA + 1.6mA per zone
Alarm	20mA + 2mA per zone
715-8/16	
Average	20mA + 4mA per zone + 0.1 per 2-wire smoke
Alarm	20mA + 58mA per shorted zone + 0.1 per 2-wire smoke + 30mA per smoke in alarm

Enclosure Specifications

Enclosure	20-Gauge cold-rolled steel
Dimensions	12.5” W x 11.5” H x 3.5” D
714-8/-16 Color	Gray
715-8/-16 Color	Red

Compatibility

XT30/XT50 Series panels
XR100/XR500 Series panels
XR150/XR350/XR550 Series panels

Listings and Approvals

California State Fire Marshal (CSFM)
New York City (FDNY COA #6123)
New York City 1100 Series Wireless (FDNY COA #6145)
Underwriters Laboratories (UL) Listed

ANSI/UL 365	Police Station Connect Burglar Alarm Systems
ANSI/UL 609	Local Burglar Alarm Units & Systems
ANSI/UL 864	Fire Protective Signaling Systems
ANSI/UL 985	Household Fire Warning System Units
ANSI/UL 1023	Household Burglar Alarm System Units
ANSI/UL 1076	Proprietary Burglar Alarm Units & Systems
ANSI/UL 1610	Central Station Burglar Alarm Units
ANSI/UL 1635	Digital Alarm Communication System Units

Underwriters Laboratories Canada (ULC) Listed

ULC Subject-C1023	Household Burglar
ULC/ORD-C1076	Proprietary Burglar
ULC S304	Central Station Burglar
ULC S545	Household Fire

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